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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,482	10/07/2003	Yoshimasa Honda	P24385	4045

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EXAMINER

ANYIKIRE, CHIKAODILI E

ART UNIT PAPER NUMBER

2609

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	01/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/30/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/679,482

Applicant(s)

HONDA ET AL.

Examiner

Chikaodili E. Anyikire

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20040323.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This application is responsive to application number (10/679, 482) filed on October 07, 2003. Claims 1-9 are pending and have been examined.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. (10/679, 482), filed on 10/7/2003.

Preliminary Amendment

3. Acknowledgement of the applicant's preliminary amendment for Application No. (10/679, 482), filed on 10/7/2003.

Information Disclosure Statement

4. Acknowledgement is made of applicant's information disclosure statement.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 7 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 7 defines a signal, picture, with descriptive material. While "functional descriptive material" may be claimed as a statutory product (i.e., a "manufacture") when embodied on a tangible computer readable medium, a signal embodying that same functional descriptive material is

neither a process nor a product (i.e., a tangible "thing") and therefore does not fall within one of the four statutory classes of § 101. Rather, "signal" is a form of energy, in the absence of any physical structure or tangible material.

Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 9 defines a computer program embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 1-3 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Van Der Schaar et al (US 2002/0006161).

As per claim 1, Van Der Schaar et al discloses a picture coding method which performs coding (Fig 1, [0021], Ln 1-2) by dividing a picture into one a base layer (Fig 1, 110 (BL), [0021], Ln 5-7) and at least one enhancement layer (Fig 1, 150 [0022], Ln 6-7) comprising:

extracting a degree of importance of each area of the picture([0023], Ln 1-5); and
assigning coded data of each area to the enhancement layers ([0022], Ln 1-3) in descending order of the degree of importance of each area ([0023], Ln 1-5).

As per claim 2, Van Der Schaar et al discloses further comprising regarding an important areas as an area having a highest degree of importance, the degree of importance is being decreased from said important area toward the a neighboring area ([0022], Ln 14-16; the prior art teaches that areas of higher quality are transmitted first, which represents that there are distinction between areas of an image and that those important areas receive priority over areas with lesser quality).

As per claim 3, Van Der Schaar et al discloses further comprising extracting the degree of importance by detecting one of a face area (Fig 5a and b, 530 [0037], Ln 1-4) and a moving object (Fig 5a and 5b, 522, [0037], Ln 5-15) in the picture (Fig 5a and 5b, [0037]).

As per claim 5, Van Der Schaar et al discloses wherein assigning coded data comprises setting, a shift value according to the degree of importance ([0026], Ln 1-7),

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a bit shift is being performed on the coded data of each area by a corresponding shift value ([0024], Ln 25-29), the coded data of each area being assigned to the at least one enhancement layer ([0024], Ln 9-12) and [0025], Ln 1-3).

As per claim 6, Van Der Schaar et al discloses further comprising setting larger shift value as the degree of importance increases ([0026], Ln 1-7).

As per claim 7, Van Der Schaar et al discloses a picture transmission method which carries out a coding and transfer of a picture using the moving picture coding method according to claim 1 synchronized with each other (Fig 7, [0044]).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Der Schaar et al (US 2004/0057521) in view of Chen et al (US 6,263,022).

As per claim 8, Van Der Schaar et al discloses a picture coding apparatus comprising:

- a picture input section that inputs an original picture (Fig 3a, 106);

- a base layer coding section (Fig 3a, 102) that extracts one base layer from said original picture and codes the base layer ([0021], Ln 5-7);

- a base layer decoding section (102) that decodes the base layer coded by said base layer coding section and reconstructs the base layer ([0021], Ln 9-12; it can be seen from Fig 1 that the coded base layer going through the inverse process of quantization and DCT to be reconstructed);

- a residual picture generation section that generates a residual picture between the reconstructed picture reconstructed by said base layer decoding section and said original picture ([0022], Ln 3-6);

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an important area detection (Fig 3a, 108) section that detects an important area from said original picture ([0023], Ln 1-4);

a gradual shift map generation section (Fig 3a, 108 and 108') that sets bit shift values as a gradually larger value according to the degree of importance of the important area extracted by said important area detection section ([0023], Ln 1-4);

a DCT section (Fig 3a, DCT (BITPLANES) Residual Image) that DCT-transforms the residual picture generated by said residual picture generation section (though the prior art does not specifically point to the connection from fig 3 it is inherent that the "DCT (BITPLANES) Residual Image" block performs a discrete-cosine transform after receiving a residual error value that is received as input to this particular block);

a bit shift section (108) that bit-shifts the a DCT coefficient obtained by said DCT section by the bit shift value obtained by said gradual shift map generation section ([0024], Ln 25-30);

a bit plane VLC section (Fig 3a, Entropy Coding) that performs a VLC processing for each bit plane bit-shifted by said bit shift section (108; though the prior art does not specifically point to the connection from fig 3 it is inherent that the "Entropy Coding" block performs the proper coding process after receiving each bit plane that was bit shifted by the bit shift section (108)); and

an enhancement layer division section (Fig 3a, 150) that divides the moving picture stream VLC-processed by said bit plane VLC section as an enhancement layer into at least one portion (150).

As per claim 9, Van Der Schaar et al discloses a program for causing a computer to execute the picture coding method according to claim 1 ([0047], Ln 1-4).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Der Schaar et al (US 2004/0057521) in view of Peng et al (US 2002/0172279).

As per claim 4, Van Der Schaar et al discloses that a picture comprises areas with higher degrees of importance than others.

However, Van Der Schaar does not explicitly teach further comprising increasing the degree of importance for an area inside the important area where there is a large residual value between a base layer decoded moving picture and the original picture.

In the same field of endeavor, Peng et al teaches MPEG-4 video compression is designed for very low-bit rate applications, using a more flexible coding standard to target internet video transmission and wireless communications market ([0002], Ln 14-17). The fine granularity scalability ("FGS") is one type of scalable coding scheme that is adopted by the MPEG4 standard. The FGS encoding scheme allows an MPEG4 stream to be encoded in two layers: the base layer, which encodes each with a fixed lower bound bit-rate; and the enhancement layer, which encodes the difference between original picture and reconstructed base layer picture ([0003], Ln 7-12). The enhancement layer residuals are weighted and encoded relative to their importance to the visual output quality ([0004], Ln 4-6). Picture with more motion activities tend to have bigger residuals in the enhancement layer, especially for the higher frequency part. This is because of motion prediction errors. For a picture containing more detailed information, high frequency residuals are too significant to be ignored ([0016], Ln 9-14).

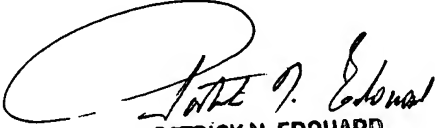
Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate the coding method of Van Der Schaar with FGS method described in Peng et al. Picture with more motion activities tend to have bigger residuals in the enhancement layer, especially for the higher frequency part. This is because of motion prediction errors. For a picture containing more detailed information, high frequency residuals are too significant to be ignored ([0016], Ln 9-14). Thus, the more important coefficients should be encoded in a higher bit plane with higher priority ([0015], Ln 21-22).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chikaodili E. Anyikire whose telephone number is (571) 270 -1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 270 - 1455. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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